

REMARKS

Claims 1-7 and 9-14 were pending in this application. By this paper, claims 3, 4, 7 and 11 have been canceled and claims 1, 9 and 12 have been amended. Accordingly, claims 1, 2, 5, 6, 9, 10 and 12-14 remain for consideration at this time.

The present invention is directed to a system for carrying out exothermic chemical reactions in which two or more single unit operated reactors are operated in parallel with one or more common reactant feed lines and one or more common product discharge lines. As used in claims 1 and 9, the term "single unit operated reactors" means that all of the individual, separated reactors are operated together in parallel as if they were a single large reactor. As currently amended, the claims also require that the reactors comprise a multitubular fixed bed catalyst arrangement and that the reactors comprise an indirect heat exchange system, which heat exchange systems are jointly operated to cool the reactors as if they were a single unit.

In the Office Action, claims 1-7, 10 and 13 were rejected under 35 USC 102(b) as being anticipated by Owen et al. (US 4,789,528). Owen is directed to a technique for sequential rotation of reactors in a multi-reactor catalytic conversion system. As set forth in the Summary of the Invention, Owen is directed to a system for sequentially rotating a system of three or more reactors to allow the most fresh, or newly generated, catalyst to be in the last process flow position and the least active, or most used catalyst to be in the first position, with one reactor in the regeneration mode. Thus, Owen describes a process in which one of the reactors is in the regeneration mode and the other reactors are operated in series with the reactor having the oldest catalyst being in the first position and the reactor with the newest catalyst being in the last position.

As amended, claim 1 requires that the reactors are to be operated as one single unit and they are operated in parallel. Additionally, the claim as amended also requires that the reactors comprise an indirect heat exchange system, which heat exchange systems are jointly operated to cool the reactors as if they were a single unit. These features are neither taught nor suggested by the Owen et al. reference. Accordingly, Applicant submits that claim 1, and those claims depending therefrom, are not anticipated nor would they have been obvious in view of the Owen et al. reference.

Claims 1-2, 4-7, 10 and 13 were rejected under 35 USC 102(b) as being anticipated by Ramos et al. (US 4,152,139). Ramos is directed to a method for cooling sponge metal in a multiple reactor unit batch system. In the illustrated embodiment, the system includes four reactors that are operated in series with two of the reactors being cooling reactors and two of the reactors being reduction reactors. Owen does not disclose a system comprising a multitubular fixed bed catalyst arrangement with two or more units operated in parallel as a single system nor does it disclose a system in which the reactors comprise an indirect heat exchange system, which heat exchange systems are jointly operated to cool the reactors as if they were a single unit. Accordingly, Applicant submits that claim 1 and those claims depending therefrom would not have been anticipated by the Ramos et al. reference.

Claims 1, 5-7, 9 and 13-14 were rejected under 35 USC 102(e) as being anticipated by Zhang et al. (US 2003/0114543). Zhang discloses a gas-agitated multiphase slurry bed reactor system for the synthesis of hydrocarbons. Zhang does not disclose a reactor system comprising a multitubular fixed bed catalyst arrangement with two or more reactors that are operated as a single unit nor does it disclose a reactor system in which each of the reactors comprises an indirect heat exchange system, which heat exchange systems are jointly operated to cool the reactors as if they were a single unit. Accordingly, Applicant submits that claim 1, and those claims dependent therefrom, are not anticipated nor would they have been obvious in view of Zhang et al.

In the Office Action, claims 9 and 14 were rejected under 35 USC 102(a) as being unpatentable over Haag et al. (US 4,279,830) in view of Owen et al. (US 4,789,528). Claim 9 is directed to a process for the preparation of hydrocarbons by the reaction of carbon monoxide and hydrogen in a reactor system as described in claim 1. Accordingly, for the reasons set forth in the discussion above with respect to claim 1, Applicant submits that claim 9 would not have been obvious in view of Owen and Haag. Claim 14 would also not have been obvious for the same reasons.

In the Office Action, claim 11 was rejected under 35 USC 103(a) as being unpatentable over Owen et al. in view of Kao et al. (US 5,266,281). Claim 12 was rejected under 35 USC 103(a) as being unpatentable over Owen et al. in view of Cachera et al. (US 3,968,653). Claims 9 and 14 were rejected under 35 USC 103(a) as being unpatentable over Haag et al. in view of

Ramos et al. Claim 11 was rejected under 35 USC 103(a) as being unpatentable over Ramos et al. in view of Kao et al. Claim 12 was rejected under 35 USC 103(a) as being unpatentable over Ramos et al. in view of Cachera et al. Claim 11 was rejected under 35 USC 103(a) as being unpatentable over Zhang et al. in view of Kao et al. Claims 2, 3 and 10 were rejected under 35 USC 103(a) as being unpatentable over Zhang et al. in view of Ramos et al. Claim 12 was rejected under 35 USC 103(a) as being unpatentable over Zhang et al. in view of Ramos et al. and Cachera et al. For the reasons set forth above with respect to the rejection of the claims under 35 USC 102 in view of Owen et al., Ramos et al. or Zhang et al., Applicant submits that none of the claims would have been obvious to one of ordinary skill in the art in view of the various combinations of references set forth in the Office Action.

In view of the foregoing amendments and remarks, Applicant requests reconsideration of this case and withdrawal of the rejections. Should the Examiner find any impediment to the allowance of the case which could be corrected by telephone interview with the undersigned, the Examiner is requested to initiate such an interview.

Respectfully submitted,

HANS GEORG LEFFER

P. O. Box 2463
Houston, Texas 77252-2463

By /Craig M. Lundell/
Attorney, Craig M. Lundell
Registration No. 30,284
(713) 241-2475